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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/760,007 | 01/16/2004 | Yuan Gao | 208.6160CT | 8670 |

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| EXAMINER |
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KALAFUT, STEPHEN J

| ART UNIT | PAPER NUMBER |
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1745

DATE MAILED: 12/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/760,007

Applicant(s)

GAO ET AL.

Examiner

Stephen J. Kalafut

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 28-40 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 28-40 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>(4 dates)</u> . | 6) <input type="checkbox"/> Other: ____. |

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Claims 33 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The term "finely divided" in claim 33 is a relative term that renders the claim indefinite. The term "finely" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. This term, and the claims, would have indefinite scope.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 28-33, 35-37 and 40 are rejected under 35 U.S.C. 102(b) as being anticipated by Lyall *et al.* (US 3,508,967).

Lyall *et al.* disclose a battery anode mixture comprising lithium and a conductive material such as granular carbon (column 2, lines 31-40). This powder would be "finely divided" as in claim 33 to the extent that this term is understood. The method of making the anode involves mixing the lithium powder and the conductive powder with mineral oil, which is a non-aqueous liquid mixture of hydrocarbons, to make a slurry (column 3, lines 38-50), followed by drying (column 3, lines 56-58), thus meeting method claims 28-33. Since this carbon is a "carbonaceous material", as in claims 36 and 37, it would inherently exhibit the same electrical

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properties as recited in claim 35. Since the battery of Lyall *et al.* is rechargeable (column 1, lines 30-32), its operation would meet the method of claim 40, with the lithium ions being repeatedly moved between its two electrodes.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lyall *et al.*

These claims differ from Lyall *et al.* by reciting ranges of particle size. Lyall *et al.* teach, however, that the particle size of the conductive material and the lithium powder are “very important” (column 2, lines 30-37). This would give the artisan motivation to determine an optimal size for the powdered components of the anode of Lyall *et al.* These claims would thus be obvious over Lyall *et al.*

Claims 38 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lyall *et al.* in view of Rao *et al.* (US 6,265,110).

These claims differ from Lyall *et al.* by reciting the particular nature of the anode carbon material, which is graphite (claim 38), optionally along with carbon black (claims 39). Rao *et al.* disclose an anode composition including both graphite and carbon black (column 3, lines 46-55), the latter being either lampblack or acetylene black. The use of both forms of carbon ensures

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good electronic conductivity and has a low voltage versus lithium (column 3, lines 34-45). For these reasons it would be obvious to use the graphite/carbon black mixture of Rao *et al.* in the anode of Lyall *et al.*

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hossain (US 6,949,314) and Dasgupta *et al.* (US 7,033,702) disclose lithium intercalated carbon electrodes.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen J. Kalafut whose telephone number is 571-272-1286. The examiner can normally be reached on Mon-Fri 8:00 am-4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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PATENT EXAMINER
GROUP 1700

